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Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No.: CTCE/BBMP/W.No.08/KRIDL/CEMENT/2014-15

Date: 19.07.2014

TEST REPORT

CLIENT	:	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
AGENCY	:	**Technical Manager**, KRIDL, Bangalore.
NAME OF THE WORK	:	Improvements to Roads and Drains at Devinagar, Muneshwara Block, TATA Nagar and Kanuramma Temple in Ward No.08, Kodigehalli Sub Division, BBMP, Bangalore.
REFERENCE	:	AEE/KG/(WO)/58/2014-15 Dated: 18.07.2014
SAMPLE ID	:	Cement
SAMPLES SUPPLIED BY	:	AGENCY

The results of the tests conducted on the cement sample are as follows:

Sl.No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 8112-1989
1	a) Initial Setting Time	IS-4031 (Part -5)	140 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5)	465 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part 3) by the Le-Chatelier method	1 mm	Not more than 10 mm
3	Standard Consistency	IS-4031 (Part -4)	25.50 %	-

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Job No.: CTCE/BBMP/W.No.08/KRIDL/SAND/2014-15 : 19.07.2014

TEST REPORT ON FINE AGGREGATES (SAND)
IS 383-1970 (RA- 2002)

Client : **Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager,** KRIDL, Bangalore.

Name of Work : Improvements to Roads and Drains at Devinagar, Muneshwara Block, TATA Nagar and Kanuramma Temple in Ward No.08, Kodigehalli Sub Division, BBMP, Bangalore.

Reference : AEE/KG/(WO)/58/2014-15 Dated: 18.07.2014

Date of Testing : 19.07.2014

Material : Sand Total Wt. of Aggregates in gms **2000**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits For Zone-II
10	0	0	0	100	100
4.75	98	4.90	4.90	95.1	90-100
2.36	205	10.25	15.15	84.9	75-100
1.18	523	26.15	41.30	58.7	55-90
600 Micron	436	21.80	63.10	36.9	35-59
300 Micron	479	23.95	87.05	13.0	8-30
150 Micron	212	10.60	97.65	2.3	0-10

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Job No.: CTCE/BBMP/W.No.08/KRIDL/AGG/2014-15 : 19.07.2014

TEST REPORT ON COARSE AGGREGATES
IS 383-1970 (RA- 2002)

Client : **Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager,** KRIDL, Bangalore.

Name of Work : Improvements to Roads and Drains at Devinagar, Muneshwara Block, TATA Nagar and Kanuramma Temple in Ward No.08, Kodigehalli Sub Division, BBMP, Bangalore.

Reference : AEE/KG/(WO)/58/2014-15 Dated: 18.07.2014

Date of Testing : 19.07.2014

Material : 40mm Aggregates

Total Wt. of Aggregates in gms **26200**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits
80	0	0	0	100	100
40	1025	3.91	3.91	96.09	95-100
20	15860	60.53	64.45	35.55	30-70
10	5985	22.84	87.29	12.71	10-35
4.75	2730	10.42	97.71	2.29	0-5

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NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No.: CTCE/BBMP/W.No.08/KRIDL/STEEL/2014-15 19.07.2014

TEST REPORT ON REINFORCEMENT STEEL

Client : **Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager**, KRIDL, Bangalore.

Name of the work : Improvements to Roads and Drains at Devinagar, Muneshwara Block, TATA Nagar and Kanuramma Temple in Ward No.08, Kodigehalli Sub Division, BBMP, Bangalore.

Reference : AEE/KG/(WO)/58/2014-15 Dated: 18.07.2014

Date of Test : 19.07.2014

Technical Reference : IS: 1786-2008

Sl. No	Nominal size (dia) (mm)	Mass per metre (Kg/mtr)	TENSILE STRENGTH			Bend Test	Rebend Test
			0.20% proof stress/Yield stress N/mm²	Tensile strength (Ultimate stress) N/mm²	Elongation percent gauge length		
1	10	0.62	513	552	13.25	O.K	O.K

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Job No.: CTCE/BBMP/W.No.08/KRIDL/Gradation/2014-15

19.07.2014

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager,** KRIDL, Bangalore.

Name of Work : Improvements to Roads and Drains at Devinagar, Muneshwara Block, TATA Nagar and Kanuramma Temple in Ward No.08, Kodigehalli Sub Division, BBMP, Bangalore.

Reference : AEE/KG/(WO)/58/2014-15 Dated: 18.07.2014

Date of Testing : 19.07.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **26500**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	1015	1015	3.8	96.2	95-100
22.4	6580	7595	28.7	71.3	60-80
11.2	5630	13225	49.9	50.1	40-60
4.75	4375	17600	66.4	33.6	25-40
2.36	3970	21570	81.4	18.6	15-30
0.600	2250	23820	89.9	10.1	8-22
0.075	2395	26215	98.9	1.1	0-8

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NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No.: CTCE/BBMP/W.No.08/KRIDL/CUBE/2014-15

29.07.2014

TEST REPORT ON CONCRETE CUBES

Client	: **Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	: **Technical Manager,** KRIDL, Bangalore.
Name of the work	: Improvements to Roads and Drains at Devinagar, Muneshwara Block, TATA Nagar and Kanuramma Temple in Ward No.08, Kodigehalli Sub Division, BBMP, Bangalore.
Reference	: AEE/KG/(WO)/58/2014-15 Dated: 18.07.2014
Sample ID	: Drain Concrete
Size of cubes	: 150mmx150mmx150mm
Cross Sectional Area	: 22500 mm^2
Technical Reference	: IS: 516-1959 (Reaffirmed 2008)
Grade of Concrete	: M_{20}
Compressive Strength as on	: 7^{th} day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	22.07.2014	29.07.2014	8.284	330.8	14.70
2	22.07.2014	29.07.2014	8.367	348.4	15.48
3	22.07.2014	29.07.2014	8.542	365.2	16.23

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Job No.: CTCE/BBMP/W.No.08/KRIDL/SDBC/Bitumen/2014-15 24.07.2014

BITUMEN CONTENT AND GRADATION DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX

AASHTO T 164 & AASHTO T 30

CLIENT	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager,** KRIDL, Bangalore.
NAME OF THE WORK	Improvements to Roads and Drains at Devinagar, Muneshwara Block, TATA Nagar and Kanuramma Temple in Ward No.08, Kodigehalli Sub Division, BBMP, Bangalore.
REFERENCE	AEE/KG/(WO)/58/2014-15 Dated: 18.07.2014
SAMPLE I/D	Roads and Drains at Devinagar, Muneshwara Block, TATA Nagar and Kanuramma Temple in Ward No.08
DATE OF TESTING	24.07.2014

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	474.5	475
3. Weight of Asphalt and Mineral matter Extracted,	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	25.5	25.00
7. Bitumen content in %	5.10	5.00
8. Average	**5.05**	

GRADATION AFTER EXTRACTION

SIEVE SIZE	Trail 1				JOBMIX
mm	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	Gradation
13.2	0	0	0	100	100
9.5	39.62	8.35	8.35	91.65	90-100
4.75	266.3	56.12	64.47	35.53	35-51
2.36	53.47	11.27	75.74	24.26	24-39
1.18	38.63	8.14	83.88	16.12	15-30
0.3	29.23	6.16	90.04	9.96	9-19
0.075	27.36	5.77	95.81	4.19	3-8

SIEVE SIZE	Trail 2				JOBMIX
mm	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	Gradation
13.2	0	0	0	100	100
9.5	41.52	8.74	8.74	91.26	90-100
4.75	266.9	56.19	64.93	35.07	35-51
2.36	51.63	10.87	75.80	24.20	24-39
1.18	42.57	8.96	84.76	15.24	15-30
0.3	28.97	6.10	90.86	9.14	9-19
0.075	26.36	5.55	96.41	3.59	3-8

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JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/W.No.08/KRIDL/WMM/Gradation/2014-15 19.07.2014

GRADATION FOR WMM

MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager,** KRIDL, Bangalore.

Name of Work : Improvements to Roads and Drains at Devinagar, Muneshwara Block, TATA Nagar and Kanuramma Temple in Ward No.08, Kodigehalli Sub Division, BBMP, Bangalore.

Reference : AEE/KG/(WO)/58/2014-15 Dated: 18.07.2014

Date of Testing : 19.07.2014

Material : WMM

Sample Location : WMM Mix Plant Oven Dry Wt (gm): **7755**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	155	155	2.0	98.0	95-100
22.4	2285	2440	31.5	68.5	60-80
11.2	1210	3650	47.1	52.9	40-60
4.75	1085	4735	61.1	38.9	25-40
2.36	980	5715	73.7	26.3	15-30
0.600	865	6580	84.8	15.2	8-22
0.075	795	7375	95.1	4.9	0-8

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Job No.: CTCE/BBMP/W.No.08/KRIDL/WMM/Gradation/2014-15

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GRADATION FOR WMM

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Agency : **Technical Manager,** KRIDL, Bangalore.

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Reference : AEE/KG/(WO)/58/2014-15 Dated: 18.07.2014

Date of Testing : 20.07.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **8440**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	285	285	3.4	96.6	95-100
22.4	2605	2890	34.2	65.8	60-80
11.2	1285	4175	49.5	50.5	40-60
4.75	1090	5265	62.4	37.6	25-40
2.36	990	6255	74.1	25.9	15-30
0.600	920	7175	85.0	15.0	8-22
0.075	785	7960	94.3	5.7	0-8

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20.07.2014

GRADATION FOR WMM

MORTH TABLE-400-11

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Agency : **Technical Manager,** KRIDL, Bangalore.

Name of Work : Improvements to Roads and Drains at Devinagar, Muneshwara Block, TATA Nagar and Kanuramma Temple in Ward No.08, Kodigehalli Sub Division, BBMP, Bangalore.

Reference : AEE/KG/(WO)/58/2014-15 Dated: 18.07.2014

Date of Testing : 20.07.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **8105**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	175	175	2.2	97.8	95-100
22.4	2515	2690	33.2	66.8	60-80
11.2	1315	4005	49.4	50.6	40-60
4.75	985	4990	61.6	38.4	25-40
2.36	915	5905	72.9	27.1	15-30
0.600	865	6770	83.5	16.5	8-22
0.075	785	7555	93.2	6.8	0-8

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